Wood in Transportation: Using a New Old Idea

Locally harvested and preservative treated wood is being used to build road bridges in Alaska

In an age of high-tech structural materials, some road bridges in Alaska are being built with a surprisingly old fashioned ingredient – wood. This has turned out to be a success for local governments and others that build roads in Alaska, thanks in part to assistance from the Forest Service's Wood In Transportation program. It means another use for locally harvested wood and potential jobs for companies with common construction equipment and workers with carpentry skills.

This stress-laminated wooden bridge in the Kepler/Bradley Lakes Recreation Area is built from local timber. It is an excellent design for stream crossings.

In 1990, the Forest Service, through it's timber bridge program, contributed $30,000 to help build the Connell Lake road bridge in Southeast Alaska, the first bridge in this return to using timber as the primary construction material for bridges. The next year the Alaska Division of Forestry was awarded a $30,000 grant to build the Little Goldstream road bridge near Fairbanks using local white spruce that had been locally treated to prevent decay, using a double diffusion process. White spruce is abundant and locally available for many rural communities in interior and southcentral Alaska.

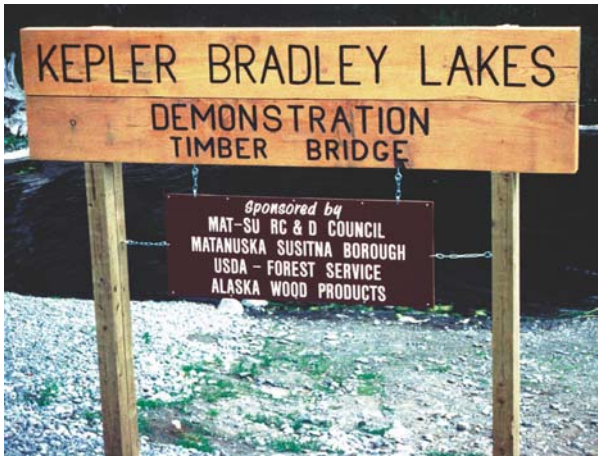
Another Forest Service grant in 1995 to the Matansuka-Susitna Resource Conservation and Development Council helped them construct a white spruce, double-diffusion treated, stress laminated bridge at the Kepler/Bradley Lakes recreation area. This is an excellent bridge design for stream crossings. They have since received an additional $100,000 grant from the Forest Service to assist them with building three more white spruce stress laminated bridges during the summer of 2000.

Local Treatment Plant

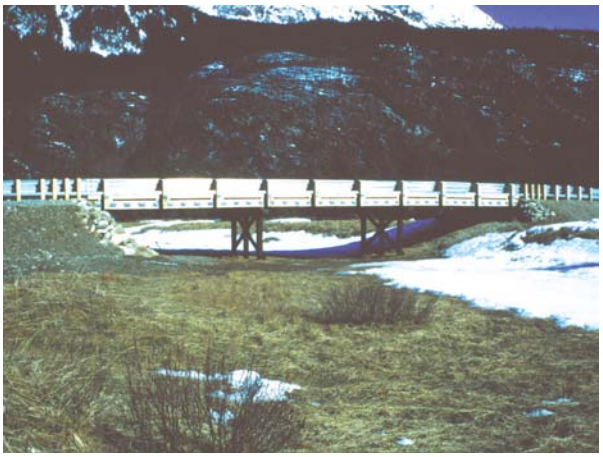
The white spruce lumber will be treated to prevent decay using the double-diffusion process. The Tyonek Native Corporation does the treating at their treatment plant in Tyonek, Alaska. The Corporation received a Forest Service Wood in Transportation grant in 1995 to assist them in constructing this treatment plant, which also has the potential to create additional jobs in the community. The double-diffusion process is the only recognized treatment that will successfully make spruce wood resistant to decay.

Chemical-Free Wood

For anyone concerned about using treated wood, Southeast Alaska



After the construction of this bridge, the Matanuska-Susitna Resource Conservation and Development Council received a second grant to help with construction of three additional bridges of a similar design.



This 62 foot Yellow-cedar bridge across Nelson Slough near Skagway gives access to the old gold rush boom town of Dyea. Because Yellow-cedar wood is naturally resistant to decay, no preservative treatment is needed. That means there are no chemicals to potentially leach into nearby water. Funding from the Forest Service's Wood in Transportation program helped get this bridge built.

can provide a treatment- free alternative, Alaska yellow cedar. Alaska yellow cedar wood is naturally resistant to decay. A Forest Service grant to the City of Skagway helped them design and build an Alaska yellow cedar bridge to access the old gold rush boom town of Dyea. This 62 foot bridge, completed in 1998, is built in three sections using locally sawn, cedar lumber. After competition of the bridge, City Manager Bob Ward, said, "It's a beautiful bridge with a wonderful smell and it certainly fits in with the character of the flats". Using Alaska yellow cedar as a building material means there are no preservative chemicals to leach into streams or other water sources or cause other environmental concerns.

Benefits to Fish

Compared to using culverts, a well designed timber bridge does not restrict stream flow or impede movement of young or adult fish, and requires less instream work to construct. This is a particularly important benefit when crossing anadramous fish streams.

Using local wood to construct highway facilities is an example of a value-added industry.

Partners in this Project

- Matansuka-Susitna Resource Conservation and Development Council
- Matansuka-Susitna Borough
- USDA Forest Service
- Alaska Wood Products
- City of Skagway

To Find Out More

If you would like additional information on timber bridges you can visit the Forest Service's national Wood in Transportation web site at:
www.fs.fed.us/na/wit

Or Contact:

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